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**AVAILABILITY AND UTILIZATION OF LIBRARY-BASED ONLINE
RESOURCES FOR LEARNING ACTIVITIES BY UNDERGRADUATES OF
UNIVERSITY OF IBADAN, NIGERIA**

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Abstract

Library-based online resources are important due to their enormous benefits to students and university libraries. In particular, they offer students the opportunity to access current and relevant information from different subject areas. The purpose of this study was to investigate the availability and use of these resources for learning activities by undergraduates of the University of Ibadan, Nigeria. Descriptive survey design was adopted for the study and the population consisted of 12,173 full-time undergraduates. Stratified, proportionate, random sampling techniques were used, with a sampling fraction of 2.5%, to obtain a sample size of 303 students. The data collection instrument was the questionnaire titled "Availability and Utilization of Library-Based Online Resources For Learning Activities By Undergraduates (AULORLAU)" and data were analyzed using descriptive and inferential statistics consisting of frequency, tables and percentages for the research questions, while Pearson Moment Correlation was used to analyse the hypothesis at 0.05 level of significance. The findings revealed that electronic journals were the most available (mean=2.9) and frequently (mean=3.3) used Library-based online resources among the undergraduates and 'assignment' was the main purpose for which they used these resources, while poor internet connectivity was their greatest challenge. There was significant relationship between availability of the resources and their utilization by the students ($r=0.197$; $p<.05$). Library-based online resources enhanced students' learning in all academic disciplines, as the resources provided lecturers and students alike with vast quantities of information in an easily accessible non-sequential format. The study therefore

recommended, among others, that university administrators and library management should make efforts to improve on bandwidth and enhance connectivity within the library premises so as to enable students have easy access to the Internet.

Keywords: Availability, Learning activities, Online resources, Undergraduates, Utilization, University of Ibadan

Introduction

Academic libraries have been employing Information and Communication Technologies (ICTs) and electronic information resources to satisfy the diverse information needs of their users. Undergraduate students, irrespective of their age and gender, have in turn been exploring the advantage offered by the availability of the online resources to support their academic activities (Obaje and Camble, 2008). Undergraduates acquire skills and knowledge which can be dependent on many factors, such as their disciplines, academic status and ranks, ages, access (hardware and location) to electronic resources, and training. Factors motivating use can be, for example, what level of importance they allocate to e-resources, how useful they have found them, and for which purposes they use e-resources (Tella, 2007).

The emergence of online resources has cut the barrier to valuable information resources which until now were difficult to access especially by scholars in the developing nations of the world. Salaam (2007) attributed the popularity of online resources to flexibility in searching and that they can be accessed remotely at any time.

With the advent of the internet, people, organizations and businesses are better informed and connected to each other than ever before. Information that once took several processes and procedures to obtain is now readily available. ICTs are available in libraries, but if not used properly, the benefits derived in library services will be minimal, and will not justify the reasons of making the ICTs available (Ekenna and Ukpebor, 2012). Asani (2005) revealed that some academic libraries like those at the universities of Ibadan, Ilorin, Jos, Lagos and Zaria subscribe to Institute for Scientific Information (ISI) and Silver Paltter Ebscohost for database CD-ROM. However, Igbeka and Okpala (2004) posited that since the 1995 introduction of CD-ROM literature search into the

University of Ibadan library system, the number of users of the CD-ROM facility was still very small as against the number of registered users. This, they revealed might be owing to the lack of current awareness or dissatisfaction of users.

Abdullahi and Haruna (2008) posited that library-based online resources are convenient to use since users are able to access information from the library, Internet café, offices and private residence at any time of the day or night. Frequency of library use by students is another factor influencing the use of online resources. However, if students use the library primarily as a quiet and convenient place to study, they may not be aware of its resources at all, as compared to the student who never put a foot in the library (Waldman, 2003).

Aina (2004) viewed online resources as information medium in electronic formats rather than the print format. In another dimension, Lang (2008) defined online resources as information that users access electronically via a computing network. Online resources are invaluable research tools which complement print-based resources in any traditional library; they provide access to information that might be restricted to the students because of geographical location or finances (Sabouri, 2010).

The use of Information Technology (IT) by libraries in both developed and the developing countries have been characterized with the provision of resources to their teeming users online. Oduwole and Akpati (2003) opined that online services are characterized by state of the art computer equipment which is fast at processing and retrieving information and relatively cheap to maintain. A survey of information technology application in Nigerian University libraries carried out by Idowu and Mabawonku (1999) revealed that the electronic mail and CD-Rom database are widely used by academics and researchers. The massive storage capacity of CD-Rom databases has enabled libraries to access instantly, easily and conveniently a substantial amount of relatively current and retrospective information at a fixed predictable cost. As a result of introduction of the use of CD-ROM databases, libraries have reported an increase in the use of journal collections, inter-library loan services, and microfiche collection (Oduwole and Sowole, 2006).

Mcharazo (2006) carried out a study on academic libraries in which faculty libraries were asked to indicate how important it is that online journals be preserved for the future. Seventy-six percent strongly agreed with the following statement: "With more and more journals becoming available electronically, it is crucial that libraries, publishers or electronic databases archive, catalogue and protect these electronic journals." The use of online resources has given rise to new modes of organizing the educational environment of tertiary institutions, new concepts of the teaching process and recasting the role played by the participants in education process. Online resources are very important and useful to undergraduate students because it supports high quality information service network which provides access to a full range of learning and teaching materials in various formats.

Online resources can therefore provide a number of advantages over traditional print based sources. These advantages include the fact that online resources are often faster to consult than print indexes especially when searching retrospectively, and they are straight forward when wishing to use combination of keywords (Lazarinis, 2010). They open up the possibility of searching multiple files at a time. Online resources can be printed, searched and saved to be repeated or consulted at a later date. They are updated more often than printed resources. Online resources have the potential for enhancing student's learning, as the resources provide teachers and students with vast quantities of information in an easily accessible non-sequential format. Thus, the role of online resources in teaching and learning is rapidly becoming one of the most important and widely discussed issues in contemporary education policy (Ajala, 2007).

Dadzie (2007) reported the following user-centred barriers to online resources' use: lack of skills in how to use information sources, lack of appropriate reward for electronic scholarly communication, lack of consistent technical support and provision and lack of time to be spent on searching for information. Other disadvantages of electronic journals mentioned include lack of back issues and problems with reading a text from the computer screen. Despite the huge benefits derived by students on high level of computer literacy, some students still have a negative perception towards the use of electronic resources let alone integrate them into learning process because they lack

patience and experience, thus they become frustrated. In addition, many undergraduate students in the university have been found to lack adequate technical information and communication skills that will enable them use computers in relation to pedagogical practices and also have been affected by some socio-demographic factors like age, sex and educational background (Luambano and Nawe, 2004). Anunobi (2006) revealed that socio-demographic related characteristics like age, gender and educational attainment are strongly associated with students' level of online resources use and these help to predict a respondent who is a high intensity computer user.

Morreale (2012) found that students and academic disciplines vary in their preference for using print or online formats of journals. The time spent to download online articles may have the strongest correlation to preference of articles in printed format. Morreale was also concerned with students' success and their use of library and print materials in the light of perceived over reliance on web sites. Some students made the effort to find the most appropriate articles, regardless of format, but 25% preferred the convenience of 'good enough online journal articles'. Tahir (2010) suggested that the provision of a range of resources enhances educators' capacity to provide a diverse range of learners with adequate agency to devise their most effective environments. Resource utilization may be linked to students' proficiency to self-regulate their learning in terms of using online resources or print resources (Malaney, 2005).

The advent of Information and Communication Technologies has accelerated availability and usage of library-based online resources among academic disciplines in the modern time. This global development has posed challenges to institutions in their attempt to meet the needs of the users of the libraries in this digital era. Institutions are now investing heavily on online resources especially for the provision of information services in the library where users are supposed to be exposed to various electronic resources outlets via internet and other electronic sources (Abdullahi and Haruna, 2008). This development is noticeable in the developed nations of the world as African countries and other developing nations are still struggling to bridge the digital divide that is preventing them from the full benefits of the electronic era. However, different efforts have been made to launch African tertiary institutions into the digital society with different

initiatives by both National and International Bodies towards providing the required networked infrastructure that would enable them have access to free or heavily discounted journals and databases through programmes like JSTOR, AGORA, ATLA, EBSCOHOST and others which will be of help in various disciplines (Ani and Ahiauzu, 2008).

Research Questions

The following are the research questions for the study:

1. What are the online resources at the central library (Kenneth Dike Library) that are available to undergraduates of the University of Ibadan?
2. What is the frequency of use of online resources at Kenneth Dike Library by the undergraduates?
3. What are the learning activities for which undergraduates use online resources at Kenneth Dike Library?
4. What are the challenges encountered by the undergraduates in utilizing library-based online resources for learning activities?

Hypothesis

The following null hypothesis was tested at 0.05 level of significance:

1. There is no significant relationship between the availability of library-based online resources and their utilization for learning activities by undergraduates of the University of Ibadan.

Methodology

The research design adopted for this study is a descriptive survey method. This is chosen because it is the most appropriate method that will provide accurate data considering the study population size and because of the advantages for the generalization of findings (Aina, 2002). In this regard, questionnaires are usually designed and used as survey instruments. The study population comprised all the registered full-time undergraduates of the University of Ibadan, who totaled 12,173. Stratified, proportionate, random sampling techniques were used to select the sample size, which consisted of 303 students. The stratification was done on Faculty basis with a sampling fraction of 2.5%, that is, 2.5% of the total number of undergraduates in each faculty were randomly selected, ensuring the selections were fairly

distributed across the departments. Bush (1980) asserted that stratified sampling technique ensures a more representative sample with less variation. Data were collected using a thirty-item self-designed questionnaire titled "Availability and Utilization of Library-Based Online Resources For Learning Activities By Undergraduates (AULORLAU)" comprising five sections- A-E, with items on biodata, availability of library-based online resources, frequency and purpose of use, and challenges to utilization of the resources. The data were analyzed using descriptive statistical tools of simple percentages and frequency distribution tables and inferential statistics of Pearson Product Moment Correlation at 0.05 level of significance.

Findings and Discussion

This section presents the results of the study with respect to the research questions and hypothesis of the study.

Answers to Research Questions

Research Question One: What are the online resources at Kenneth Dike Library that are available to the undergraduates?

Table 1: Availability of Library-based Online Resources

Online Resources	Very Readily Available		Readily Available		Occasionally Available		Not Available		Mean
	No	%	No	%	No	%	No	%	
E-Journals	121	42.3	60	21	54	18.9	51	17.8	2.9
E-Books	81	28.3	97	33.9	55	19.2	53	18.3	2.7
CD-ROMs	74	25.9	91	31.8	57	19.9	64	22.4	2.6
Online Databases	91	31.8	83	29.0	57	19.9	55	19.3	2.7
OPACs	83	29.0	88	30.8	54	18.9	61	21.3	2.7

Table 1 revealed data on the availability of online resources to the students.

The online resources were almost equally available except E-journals (mean=2.9) and CD-ROMs (mean=2.6) which recorded the highest and least availability respectively. Each resource was available, to an extent, to more than 77% of the students but contrarily, each was not available to some of them as well, ranging from 17.8% (E-journals) to 22.4% (CD-ROMs). However, it is not clear why the resources were not available.

Research Question Two: What is the frequency of use of online resources at Kenneth Dike Library by the undergraduates?

The students were asked to indicate how frequently they use online resources. The results are presented on table 2.

Table 2: Frequency of use of online resources

Online Resources	Daily No %	Weekly No %	Monthly No %	Occasionally No %	Never No %	Mean
E-Journals	72 25.2	59 20.6	56 19.6	78 27.3	21 7.3	3.3
E-Books	68 23.8	58 20.3	55 19.2	62 21.7	43 15.0	3.2
CD-ROMs	60 21.0	56 19.6	51 17.8	65 22.7	54 18.9	3.0
Online Databases	73 25.5	61 21.3	27 9.4	67 23.4	58 20.4	3.1
OPACs	71 24.8	56 19.6	34 11.9	60 21.0	65 22.7	3.0

The undergraduates used E-journals more than any other online resource in the library, with E-books nearing the same frequency of use while OPACs and CD-ROMs were the least in terms of frequency of usage. For every resource, daily use was recorded by about 25% of the students, except CD-ROMs (21%). Interestingly, nearly half of the students used each resource at least once in a week. Monthly usage of OPACs and databases was very low compared to other resources. More interestingly, about 15% had never used E-books inside the library even though they were largely available among all resources.

Research Question Three: What are the learning activities for which undergraduates use online resources at Kenneth Dike Library?

The students' responses pertaining to the learning activities for which they use online resources are presented on table 3

Table 3: Use of Online Resources for Learning Activities

Learning Activities	Strongly Agree	Agree No	Disagree No	Strongly Disagree	Mean
	No %	%	%	No %	
Assignment	78 27.3	91 31.8	58 20.3	59 20.6	2.7
Term Paper	69 24.1	98 34.3	58 20.3	61 21.3	2.6
Seminar	67 23.4	94 32.9	60 21.0	65 22.7	2.6
Class work	70 24.5	90 31.5	64 22.3	62 21.7	2.6
Preparing for exams	73 25.5	93 32.5	61 21.4	59 20.6	2.6
Preparing lecture notes	67 23.4	91 31.8	65 22.8	63 22.0	2.6

The major learning activity for which the undergraduates use online resources in the library is 'assignment', with all other purposes being rated equally. We are surprised at these findings since the usual observation is that students use the library more often during and when examination periods are closing in. Probably, an explanation is that nowadays, lecturers encourage their students to use library resources for assignment purposes.

Research Question Four: What are the challenges encountered by the undergraduates in utilizing library-based online resources for learning activities?

The challenges are presented on table 4

Table 4: Challenges to the Utilization of Library-Based Online Resources

Challenges	Strongly Agree No %	Agree No %	Disagree No %	Strongly Disagree No %	Mean
Poor Internet connectivity	81 28.3	75 26.2	74 25.9	56 19.6	2.6
Lack of relevant electronic resources in my discipline	60 20.9	63 22.0	87 30.5	76 26.6	2.4
Difficulty to access the online resources	59 20.6	75 26.2	80 28.0	72 25.2	2.4
Erratic power supply	69 24.1	80 27.9	73 25.6	64 22.4	2.5
No assistance from the library staff	58 20.3	63 22.0	89 31.1	76 26.6	2.4
Costly to access and use	62 21.7	64 22.4	83 29.0	77 26.9	2.4
Lack of technical know-how	58 20.3	76 26.6	83 29.0	69 24.1	2.4
Lack of training of staff to support users	54 18.9	73 25.5	87 30.4	72 25.2	2.4
Inability to access the available electronic database	57 19.9	77 26.9	83 29.1	69 24.1	2.4
Lack of ICT skills	55 19.2	80 28.0	76 26.6	75 26.2	2.4

Poor Internet connectivity (mean=2.6) was the greatest challenge to the utilization of online resources in the library, with

'erratic power supply' posing a major challenge as well (mean=2.5). All other challenges were equally rated but not far away in the ratings.

For 'poor internet connectivity' and 'erratic power supply', more than 50% of the undergraduates agreed or strongly agreed they were challenges encountered while at least 40% held the same views for each of other challenges.

Test of the Hypothesis

Ho 1: There is no significant relationship between the availability of library-based online resources and their utilization for learning activities by undergraduates of the University of Ibadan.

Table 5: Relationship between availability of online resources and utilization by the undergraduates

Variables	N	SD	Mean	r	P
Availability of online resources	303	9.67	6.38	.197	P<.05
Utilization of online resources	303	8.73	5.34		

Pearson correlation was used to test hypothesis one and the result indicated there was significant relationship between availability of online resources and their utilization by the undergraduates ($r = 0.197$, $N = 303$, $p < .05$). Therefore the hypothesis is rejected. This implies that availability of online resources in the library would influence use of those resources. The greater the availability, the more the usage.

Discussion

The emergence of online resources has cut the barrier to valuable information resources which until now were difficult to access especially by scholars in the developing nations of the world. Salaam (2007) attributed the popularity of electronic resources to flexibility in searching, compared to their paper-based counterpart, and that they can be accessed remotely at any time, stressing further that online resources are the electronic representation of information.

Our findings revealed that E-journals were the most available online resources for undergraduates' use. According to Ugah (2008) in a study conducted on availability of online resources and usage among

students of Michael Okpara University of Agriculture in South-West, Nigeria, E-journals were 'very readily available' to majority of the respondents, with 59.8% and 52.4% accessing these journals and E-books respectively. This is in line with findings of Sampath-Kumar and Kumar (2010) which revealed that the number of Internet users and electronic journals since the year 2000 has increased by a staggering 69 times in the metropolitan areas and 33 times in the semi urban towns in India. It was also predicted that the Internet boom in India is still on the rise, and as per the ongoing trends, it would continue on its exponential path of increase. Cretchley (2007) pointed out that, indeed, electronic information sources and more particularly the Internet resources have become an increasingly substantial component of academic library collections over the last decade.

The results of the present study also revealed that E-journals were the most frequently used resources among the undergraduates. This is in line with the findings of Tella (2007) in a study of Internet access and usage by students at the University of Botswana. He reported that although computers with Internet facilities were still inadequate which denied many students the opportunity of access, E-journals were more frequently used by majority of the respondents. Jagboro (2008) conducted a study on usage of the internet at Obafemi Awolowo University, Nigeria. The analysis showed that 22.06% of the students accessed E-journals on a daily basis, with 38.24% and 11.7% gaining access weekly and monthly respectively.

For the purpose of using library-based online resources among undergraduates, results indicated that undergraduates use online resources mainly for their assignments. In the year 2000, JSTOR executed a survey of 32,000 Humanities and Social Science students in the United States. More than 60% of respondents indicated that they were comfortable using online resources for assignment, although e-journals were not included in the list of most valuable resources. The most popular online resources were online catalogs, full-text electronic journal databases, and abstracting and indexing databases which were used mainly for assignments.

The greatest challenge to the utilization of library-based online resources was poor Internet connectivity. This corroborated the findings of Watts and Ibegbulem (2006) who examined some of the barriers to the usage of electronic information resources available at

the Medical library of College of Medicine, University of Nigeria, among 450 undergraduates. Their findings revealed that poor Internet connectivity, lack of an adequate ICT infrastructure, absence of in-depth ICT skills and information searching skills among library staff and high cost of using the cybercafé are barriers to the use of online resources. Furthermore, Oduwole and Sowole (2006) in a study carried out among 220 undergraduates in selected universities in South-West Nigeria, identified problems in the adoption and usage of ICT and online resources in Nigeria. The major challenges were poor Internet connectivity, lack of adequate ICT skills among staff and users, and prohibitive cost of gaining access to Internet through cybercafé when utilizing online resources.

The result of Pearson correlation on the relationship between the availability of library-based online resources and their utilization for learning activities indicated a significant relationship. Availability of online resources at Kenneth Dike (the central library) has a relationship with their utilization by undergraduates in University of Ibadan. The greater the availability of these resources, the more the usage. This indirectly corroborates the findings of Ojo and Akande (2005) who examined students' access, usage and awareness of online information resources at the University College Hospital (UCH) in Ibadan, Nigeria. The study revealed that the level of usage of the electronic information resources was not high, given the low-level of availability of those resources. A major problem identified was lack of information retrieval skills for exploiting online resources, thus making the level of usage of resources by medical students very low.

Conclusion

The ever growing usage of online resources among undergraduate students assists in teaching, learning and research. The rapid growth of Information and Communication Technologies is changing the way academic libraries operate today as they are investing heavily on these technologies, including online resources. Our findings overtly revealed that undergraduates of University of Ibadan are greatly inclined to use library-based online resources in response to availability of these resources, with greater use for the purpose of academic assignments, compared to other specified purposes. It was also observed that there were many challenges to the use of these resources among the

students, mainly poor Internet connectivity. This indeed is a serious challenge as it militates against the optimal use of online resources for teaching, learning and research.

The use of library-based online resources in universities makes it possible for courses, modules, art-training programmes that are interactive and multimedia-based to be delivered at anytime and anywhere, to enable the institutions' objectives to be expeditiously achieved. Library-based online resources are important in libraries due to their enormous advantages to students and the university libraries. They offer students the chance to have access to relevant and current information from different subject areas. Library-based online resources also enhance students' learning in all academic disciplines, as the resources provide lecturers and students alike with vast quantities of information in an easily accessible non-sequential format.

Recommendations

The following recommendations were made based on the findings of the study.

1. University administrators and library management should make efforts to improve on the bandwidth and enhance connectivity within the library premises in order to enable students have easy access to the Internet.
2. Trained library personnel should always be on ground to assist students and educate them on library-based online resources usage and library services within the University.
3. Institutions can develop software applications and websites that can assist students with their school work which will enhance their academic performance.
4. Adequate provision should be made for alternative sources of power generation in order to solve the problem of erratic and epileptic power supply which hinders the effective use of online resources in the libraries.

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